

WHAT IS CLAIMED IS:

1. A reactor system for reacting a hydrocarbon or hydrocarbon derivative charging material, comprising:

    a catalyst-coated reaction chamber having a reaction chamber inlet for feeding a reaction educt stream into said reaction chamber; and

    an electric heater formed by a catalyst-coated, reaction educt stream permeable electrical heater, through which the educts for reacting the charging material can be fed at least in a start operating phase of the reactor system; wherein

    the electric heater is flat and is disposed on a level with the reaction chamber inlet;

    the electric heater at least partially covers a cross section of the reaction chamber inlet.

2. The reactor system, as claimed in Claim 1, wherein the heater has a plurality of heating elements, which together cover the cross section of the reaction chamber inlet, at least partially.

3. The reactor system, as claimed in Claim 1, wherein the heater has a heating disk, which completely covers the inlet cross section of the reaction chamber.

4. A reactor system for reacting a hydrocarbon or hydrocarbon derivative charging material, comprising:

a catalyst-coated reaction chamber having a reaction chamber inlet for feeding a reaction educt stream into said reaction chamber; and

an electric heater located in front of the reaction chamber inlet for heating at least one reaction educt in a start operating phase;

wherein the electrical heater includes means for point-by-point injection of at least one reaction educt, heated in the heater, into the reaction chamber at at least one place within the reaction chamber inlet cross section.

5. The reactor system, as claimed in Claim 1, wherein the reactor system comprises a switchable reaction educt feed system with feed means which feed the reaction educt stream in a start operating mode into the reaction chamber only over one part of the inlet cross section and in a normal operating mode into the reaction chamber over the entire inlet cross section.

6. The reactor system, as claimed in Claim 4, wherein the reactor system comprises a switchable reaction educt feed system with feed means which feed the reaction educt stream in a start operating mode into the reaction chamber only over one part of the inlet cross section and in a normal operating mode into the reaction chamber over the entire inlet cross section.